Huronia District Fisheries Management Plan

DRAFT

Ontario
Ministry of Natural Resources

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Preface

This draft of the Huronia District Fisheries Management Plan represents the fifth of a six stage planning program. It presents descriptive information on the extent and nature of the district fisheries resources. In addition, it contains a series of statements defining management objectives and production/utilization targets for sportfish, commercial food fish and baitfish and management strategies and tactics to facilitate achievement of targets and objectives. Finally, it describes, in specific terms, when and how strategies and tactics are to be implemented in the next five years.

In developing this draft plan, attention has been paid to public input received during the first phase of the public involvement component of the planning program. All comments received were documented in the report Summary and Analysis of Public Input, September 1987.

Comments were generated by interested members of the public following their review of the document Background Information Summary Report and, in most cases, their attending at least one of three public information forums held July 21, 22 and 23, 1987.

The summary report contained, in addition to descriptive information, a table of optional management strategies and tactics. They were developed and published as a starting point for inhouse and public discussions. A significant re-structuring of the original listing including the addition of priorized lists of sites/management areas was undertaken and the result forms a key component of this document.

1.0 Introduction

1.1 Purpose

The purpose of the Fisheries Management Plan for Huronia District is to provide both short and long term direction for the fisheries management program.

1.2 Planning Process

The fisheries management plan is being developed according to the Ministry of Natural Resources integrated resources management planning system (M.N.R., 1986a) Resource management planning is carried out to solicit public input to ensure programs and activities are integrated so that targets and objectives can be achieved and to provide managers with direction on how to manage a particular resource.

Fisheries management planning has been ongoing across the province. A plan is to be prepared for each district's fisheries. This Huronia District Fisheries Management Plan is being prepared within the context of a number of resource management planning documents.

The Southern Ontario Coordinated Program Strategy (S.O.C.P.S.) (M.N.R., 1982), provided general policies, guidelines and targets for resource management in the administrative districts within southern Ontario. The Huronia District Land Use Guidelines (D.L.U.G.) (M.N.R., 1983), defined resource management program guidelines, objectives and strategies to be used to achieve targets, within the district, outlined in the Coordinated Program Strategy.

The policy framework, management principles, goals and objectives for fisheries management in the province of Ontario originate from the task force in Strategic Planning for Ontario Fisheries (S.P.O.F.) Emanating from S.P.O.F., the Lake Huron Strategic Fisheries Management Plan (M.N.R., 1986b) was prepared to provide a comprehensive, lake-wide management strategy for individual districts to supplement the direction provided by the D.L.U.G.'s.

District Fisheries Management Plan development has been guided by a Terms of Reference prepared by the district in August of 1986. It was followed by preparation of a Detailed Background Information Report and a Background Information Summary Report. Both were completed July, 1987. Following public consultation, the report Summary and Analysis of Public Consultation was completed, September, 1987.

1.3 Existing Policy and Technical Direction

This plan adheres to current Ministry of Natural Resources policies and is founded on an integrated resource management approach. This approach encourages multiple use but coordinates various programs to ensure that conflicts are minimized and management strategies that benefit several programs are encouraged. An integrated approach to fisheries management is critical given that other issues and activities have a direct impact on local fisheries.

Management strategies are based upon accepted resource management principles presented in S.P.O.F. documents and current technology.

It must be recognized that this plan only highlights the results of many studies and planning exercises.

2.0 District Fisheries Perspective

2.1 The Fisheries Resource

Huronia District encompasses 853,000 ha of which 225,000 ha or 26 percent is water. Of the water area the Huronia portion of Lake Simcoe (36,250 ha) and the district's portion of Georgian Bay (160,800 ha) combined, represents approximately 88 percent of the total. Warmwater lakes (55) and warmwater rivers and streams represent six percent (13,646 ha) and 0.6 percent (1,330 ha) respectively. The balance of the surface water resource is in the form of 1,600 km of coldwater rivers and streams (992 ha).

The most significant climactic factor affecting the district's fisheries relates to precipitation which is received throughout the year. Seventy-two percent of the average annual accumulation falls as rain and rivers, streams and lakes are recharged continually.

There are two types of bedrock in the district. Precambrian granites and gneisses, most of which are either exposed or thinly covered, are found in the northeast. The remaining area is underlain by paleozoic limestones and shales. Generally, these are obscured by varying thicknesses of glacially deposited materials.

FIGURE 1

HURONIA DISTRICT

REGIONAL SETTING

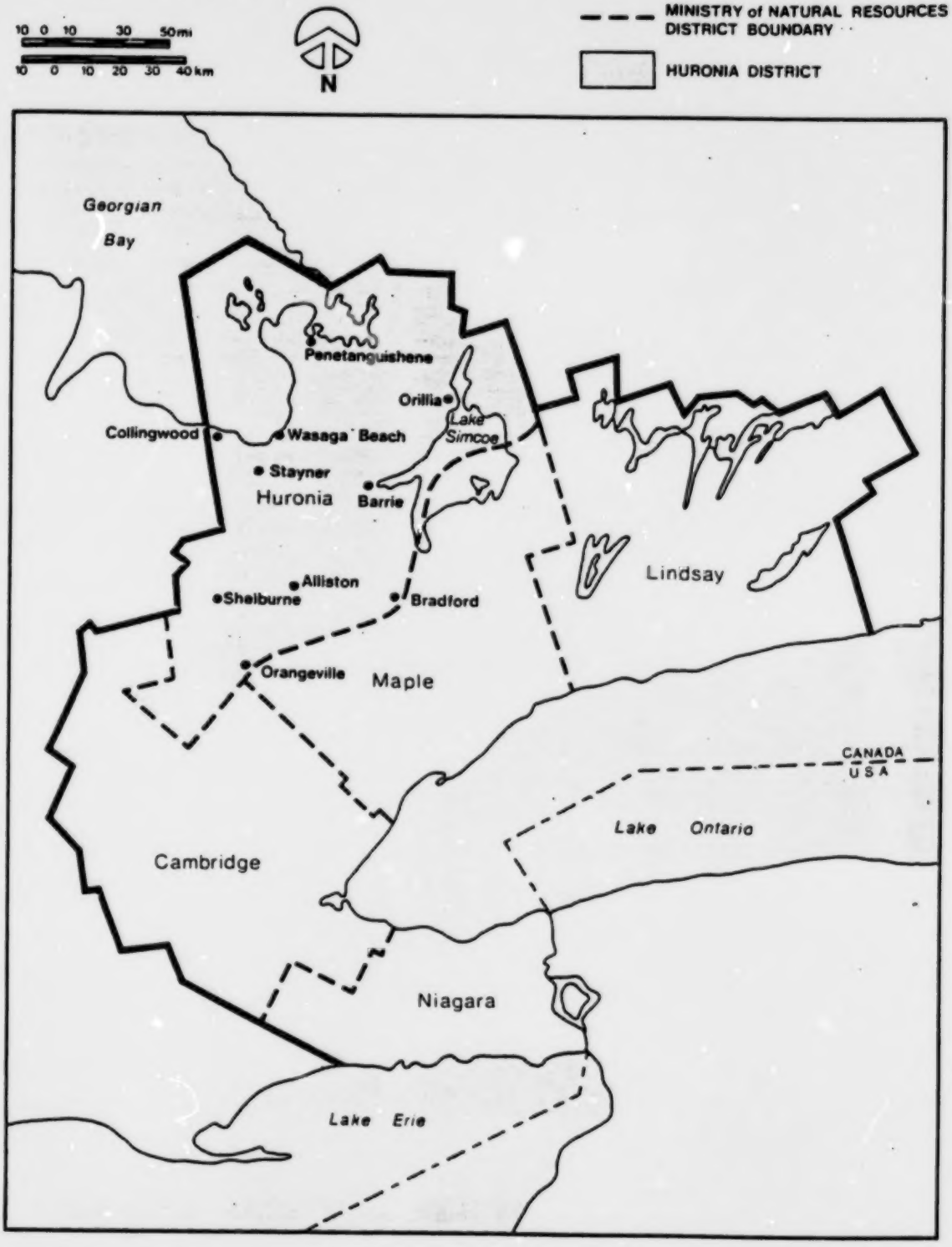
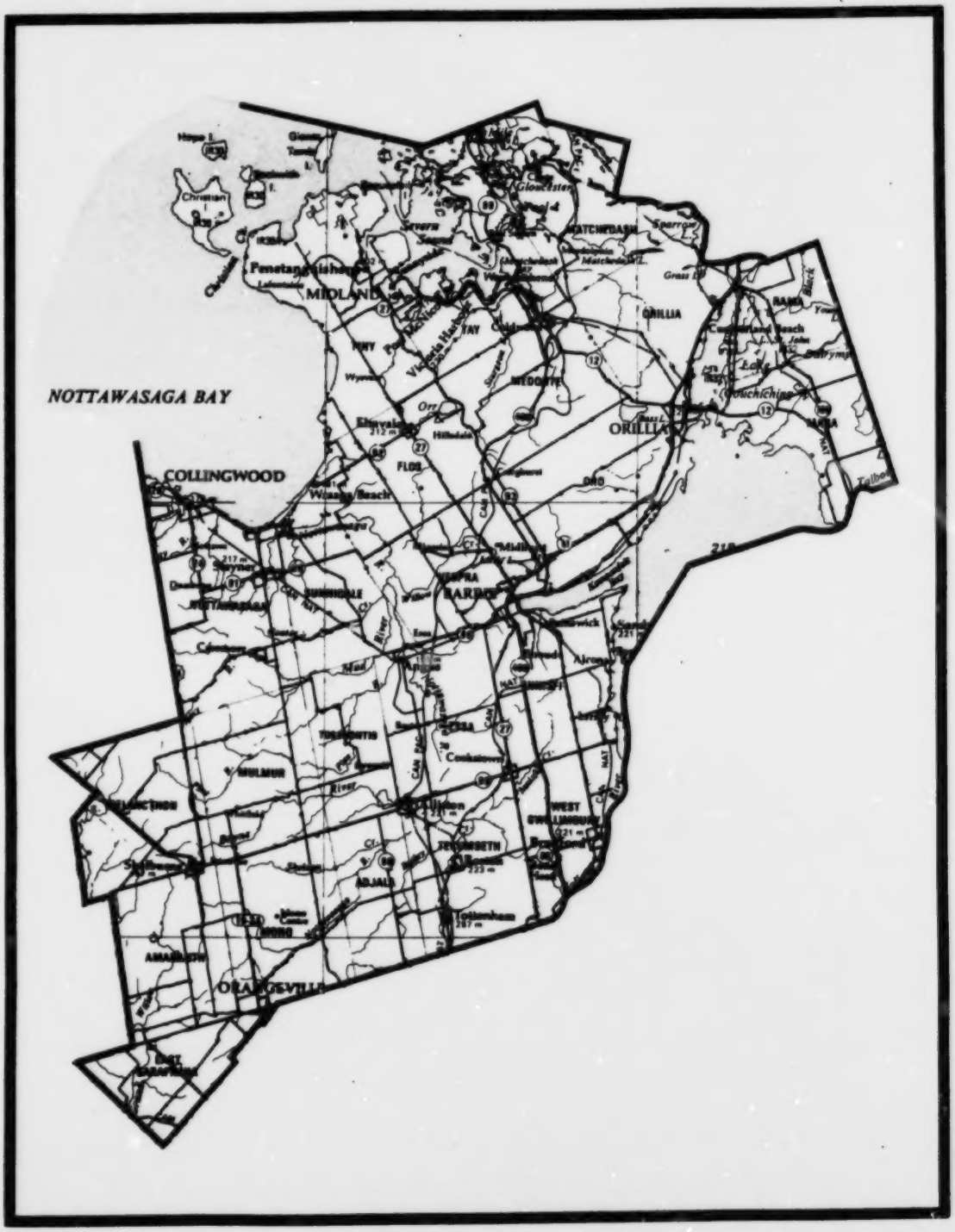


FIGURE 2

HURONIA DISTRICT



Sixty percent of the district's warmwater lakes are on the Precambrian Shield where runoff is rapid and a lack of alkaline soils makes the waterbodies susceptible to the detrimental effects of acid rain. In addition, a lack of natural aquifiers of significant size contributes to dramatic fluctuations in surface water levels.

In the remainder of the district, four upland type physiographic regions serve as watershed divides and their abundant, permeable soils provide excellent headwater source areas for most of the coldwater (trout) streams. The Simcoe Lowlands complete the physiographic makeup of the district. Here, the poorly drained soils combined with intensive agricultural activity, has lead to enrichment of receiving water bodies. This process is most significant in the Lake Simcoe watershed which receives enriched run off from large agricultural areas including the intensively farmed Holland Marsh.

2.2 Current and Potential Yields

The current yield of fish from district waters, as indicated by estimates of current harvest, is significantly less than the estimated potential yield.

Current annual yields of sport fish from all fish communities total 151,500 kg while the yield of commercial food fish is 54,240 kg (not including baitfish). Commercial food fish production is confined to the waters of Georgian Bay and is regulated through two commercial fish quota areas - GB09 and GB11. The current yield of baitfish is 68,796 kg.

Potential yield is the theoretical, biologically sound amount of fish which can be removed annually without having a negative impact on population levels.

The total potential annual yield from all district waters is 664,237 kg. This includes 140,320 kg for inland waters (warmwater lakes, rivers and streams and coldwater rivers and streams) 362,965 kg for Georgian Bay and 160,952 kg for Lake Simcoe. In addition, the potential yield of baitfish is 171,991 kg/yr with almost 60 percent of this coming from Lake Simcoe and Georgian Bay combined.

Excluding baitfish potential, 55 percent of the potential yield lies in Georgian Bay while an additional 24 percent is represented by Lake Simcoe.

The total potential yield in Georgian Bay can be partitioned for commercial and sport utilization. Commercial fish utilization is determined by quota allocations. This represents 98,896 kg annually for Georgian Bay.

2.3 Current and Projected Resource Use

Use of the district's fishery resource is measured in angler days (one angler day equals four hours) for sport fisheries, in kilograms for the commercial food fishery and in either kilograms or dozens for the commercial baitfish industry.

TABLE 1

Summary of Fisheries Resource Inventory Data - Huronia District (1986)

WATER	NO.	TOTAL AREA (ha)	TOTAL ESTIMATED POTENTIAL YIELD (kg/ha/yr)	(kg/yr)
Inland Lakes	47	3933	7.3	30227
Trent Severn Waterway	8	10571.6	9.0	95258
Coldwater Rivers & Streams	55	922	7.5	6915
Warmwater Rivers & Streams	4	264.3	30.0	7920.00
Total inland waters		15898	8.8	140320
Georgian Bay		160800	2.3	362965
Lake Simcoe*		36250	4.4	160952
GRAND TOTAL		212948	3.1	664237

* Values for Lake Simcoe taken from Lake Simcoe Background Report, 1986, and divided by 2 to approximate contribution to Huronia District

TABLE 2: RESOURCE USE, CAPABILITIES AND TARGET TESTING - SPORTS FISHERY

Species Assemblage*	Current Use kg	Current Use Angler Days	Projected Use kg	Projected Use Angler Days	DLUG Target kg	DLUG Target Angler Days	Allowable Yield kg	Allowable Yield Angler Days	Interim Refined Target kg	Interim Refined Target Angler Days
Trout	37900	189300	43500	217700	-	-	136600	682900	43500	217700
Whitefish	7300	36300	8300	41700	-	-	31600	157800	8300	41700
Herring	9300	46500	10700	53500	-	-	6600	33000	6600	33000
Walleye	17200	34400	19800	39600	-	-	29900	59800	19800	39600
Pike	30900	61900	35600	71100	-	-	75300	150700	35600	71100
Perch	12600	25100	14400	28900	-	-	66700	133300	14400	28900
Bass	34200	68400	39300	78600	-	-	87900	175700	39300	78600
Other	2100	4200	2400	4800	-	-	115000	230100	2400	4800
Total	151500	466100	174000	535900	324000	2340000	549600	1623300	169900	515400

* Similar species are grouped into assemblages for analysis and descriptive purposes. They are as follows.

Trout - lake trout, lake trout backcross, brook trout, rainbow trout, chinook salmon, coho salmon, pink salmon
Whitefish - lake whitefish, round whitefish
Herring - deepwater cisco, lake herring
Walleye - walleye
Pike - northern pike, muskellunge
Perch - yellow perch
Bass - largemouth bass, smallmouth bass, black crappie
Other - may include other sport species not listed or additional yield of listed species

TABLE 3: RESOURCE USE, CAPABILITIES AND TARGET TESTING - COMMERCIAL FISHERY

Baitfish (1985)	Current Use kg	Current Use doz.	Projected Use kg	Projected Use doz.	DLUG Target kg	DLUG Target doz.	Allowable Yield kg	Allowable Yield doz.	Interim Refined Target kg	Interim Refined Target doz.
Lake Simcoe *	19910	318568**	28587	457392	16614	265824	19910	318568	19910	318568
Rest of District	48886	782174	56219	899504	15625	250000	152081	2433296	56219	899504
Total	68796	1100742	84806	1356896	32239	515824	171991	2751864	76129	1218072
Food Fish (1985)										
Whitefish	36105		60483		-		60483		60483	
Chub	8950		17318		-		17318		17318	
Yellow Perch	1681		11577		-		11577		11577	
Walleye	1573		2589		-		2589		2589	
Lake Trout Backcross	5340		6338		-		6338		6338	
Other	591		591		-		591		591	
Total	54240		98896		47000		98896		98896	

* Values for Lake Simcoe taken from Lake Simcoe Background Report, 1986, and divided by 2 to approximate contribution to Huronia District

** 1 kg baitfish = 16 doz. baitfish

With one species exception (herring) current use of the resource is within the resources' biological production potential (allowable yield) when averaged across the district. It is estimated that anglers expend 466,000 angler days in harvesting approximately 151,500 kg of fish. Anglers spend 189,300 angler days fishing for trout, followed by 68,400 for bass and 61,900 for pike. These figures compare to an allowable yield of sport fish of 549,600 kg and a potential demand of 1,623,000 angler days. However, there are shortages of specific desired species in certain locations.

Use and harvest of the fishery is expected to increase 15 percent by the year 2000 to about 535,900 angler days and 174,000 kg of fish. This estimate is based, in part, upon the projected increase in the province's population. However, for planning and management purposes, interim refined targets have been developed which reflect the actual supply of fish (and the restriction on use created by limited access facilities). The sport fisheries refined target is to provide 515,400 (10.6 percent above current levels) angler days and a harvest of 169,900 kg of fish.

The harvest by the commerical food fish industry has been fluctuating on an annual basis and in 1986 was 98,267 kg landed by five commercial fishermen. It is not possible to project commercial harvests but for the purpose of targeting requirements an estimate approximately equal to the 1986 harvest will be used.

Currently (1986) there are 19 baitfish harvest licences (not including Lake Simcoe) and harvest is estimated at 782,174 dozen from district waters and 318,568 from Lake Simcoe. The target for baitfish is 1,218,072 dozen for the district. Meeting this target will require increasing the harvest in Georgian Bay and inland waters while maintaining Lake Simcoe at current use levels.

2.4 Relevant Non-Fisheries Data

A considerable amount of relevant information must be considered during the process of plan development.

There are presently 10 major dams on district rivers and streams. They are responsible for altering fish habitat, restricting fish movement and partitioning or locking various species into different portions of a stream.

The Severn River is a very productive water body, the flow of which is completely regulated by three hydro electric power dams. As a major component of the Trent Severn Waterway (TSW), there is one marine navigation lock and a marine railway on the river. Water level management is designed to maximize hydro production potentials, facilitate navigation during the spring, summer and fall, prevent flooding and protect fish habitat. Control of water levels in the TSW system also affects levels on Lakes Couchiching, Sparrow and Simcoe. M.N.R. has no direct control over water level management rather, concerns regarding protection of critical fish habitat are relayed to the TSW and Ontario Hydro.

Ontario Hydro is currently studying the feasibility, costs and benefits of altering the operation of the Big Chute Generating Station to increase power generating capacity. Impact on fisheries habitat is one factor being studied.

Land use practices such as agricultural activities, deforestation, mineral extraction and urban development have significant potential impact on local fisheries. Similarly, various forms of pollution, whether agricultural or industrial, can alter water quality or fish habitat thereby reducing potential fish yields. (The Ministry of the Environment (MOE) is currently monitoring water quality in Lake Simcoe, Collingwood Harbour and Severn Sound).

MOE also controls the removal of water from streams. This occurs in the southern agricultural areas of the district where water is used for irrigation. MNR has no formal opportunity to influence this activity and it may be impacting stream fisheries, especially salmonids.

As part of a Sea Lamprey control program the Federal Department of Fisheries and Oceans treats the Sturgeon, upper Nottawasaga and Mad Rivers and Silver Creek, on a three to four year cycle, with lampricide. One physical barrier (Sturgeon River) is maintained on the Sturgeon River. Other streams are regularly monitored and treated as necessary.

The district's extensive road network provides access to most waterbodies and private access points and marinas provide ample access for anglers with boats. Access to small streams and Precambrian Shield lakes is limited. Portages and aircraft are often used to gain access to the shield lakes. Access for all shore anglers is restricted or nonexistent on most waterbodies.

2.5 Problems and Issues

Problems and Issues have been described in the background information documents. Problems and issues may be summarized under six general categories.

(i) Loss of Fish Habitat and Environmental Quality

Fish habitat destruction and/or deterioration has resulted in loss of fish stocks and loss of fishing opportunities. The most significant contributing factors to this problem are land development including urban and shoreline development/alteration and agricultural land use practices.

Nutrient loading from agricultural and urban runoff and sewage treatment plants has accelerated eutrophication of Lake Simcoe. Intensive agricultural practices have damaged numerous natural watercourses. Shoreline developments including dredging, filling and dock construction have created problems on Lake Simcoe, Georgian Bay and many inland lakes.

The water level management program on the Severn River may have detrimental effects on fisheries especially walleye fisheries as a result of impacts on spawning areas.

Contaminants produced through industrial activities have had few impacts on local fisheries.

Siltation has damaged many coldwater streams. This has resulted from gravel pit drainage, road construction, residential and industrial development, stream channelization and poor agricultural practices.

(ii) Loss of Fish Stocks

Loss of fish stocks may arise from a number of causes including loss/destruction of habitat, over exploitation, eutrophication (loss of water quality) illegal harvest, predation and introduction of exotic species.

Over harvest has been the primary factor causing reductions of largemouth bass populations in small inland lakes such as Boleau and of lake trout in Georgian Bay. This factor combined with habitat deterioration caused complete loss of lake trout from Six Mile and Woodland Lakes and Gloucester Pool.

A decline in Georgian Bay walleye populations has occurred in recent years and may, in part, be attributed to changes in the water quality of Severn Sound.

Introduction of exotic species has been a factor in declines of Georgian Bay lake trout (sea lamprey) and may contribute to a decline of muskellunge (carp). Lake Simcoe whitefish and lake trout may also be negatively affected by rainbow smelt.

Habitat destruction/deterioration (construction of dams, ponds) combined with heavy exploitation and agricultural water uses is placing stress on trout species in coldwater streams such as Boyne River brown trout and Sheldon Creek brook trout.

Illegal harvest especially during spawning season can, potentially, affect rainbow trout and walleye populations.

(iii) Under-utilization of Stocks

Within the district some stocks of traditionally sought after sport species such as rainbow trout and largemouth bass as well as coarse fish such as carp, suckers, catfish and panfish are being underutilized.

With sport species, a major contributing factor is the lack of access to trout streams where they cross private property. Georgian Bay trout species are effectively inaccessible during summer months due to their dispersal to deeper (unknown) portions of the bay.

Contamination in local sport species (eg. Lake St. John walleye) leads to underutilization.

Coarse fish, present in suitable numbers in most streams and lakes, are underutilized largely as a result of a lack of knowledge, on the part of anglers, of the various species characteristics in terms of providing a good (existing) fishing experience and a palatable food product.

(iv) Resource Use Conflicts

Within Huronia District the most noteworthy user conflict occurs between commercial and sport fishermen. However, competition also occurs between various segments of the sports angling public. Ice fishermen and summer anglers may perceive each other as their competition, e.g. Sparrow Lake; local anglers see non-residents as competitors for fish, e.g. yellow perch fishing on Lake Simcoe. Conflicts may occur between anglers that prefer one species over another e.g. brown trout vs. rainbow trout. Groups differing on the basis of fishing methods such as fly fishermen vs. hardware fishermen may perceive a conflict.

(v) Lack of Public Awareness

Fisheries management is a complex undertaking and the public can benefit from greater knowledge and awareness of the many factors involved. Unrealistic demands often are placed upon the resource and the commonly held beliefs are that stocking fish or increasing enforcement activity will result in more fish in the creel. The role of habitat is less than fully understood and there is a lack of appreciation for the impact other water users have upon the fishery. There is a need to provide the public (anglers, developers, planners, municipal decision makers) with more fisheries information and public response indicates support for implementing or expanding public education programs.

(vi) Insufficient Scientific Knowledge

Present efforts by managers are often hampered by lack of information on which to base management decisions. A general need exists to update and expand population and critical habitat inventories to assist in setting management priorities. Existing fish production and allowable yield predictions need considerable refinement. There is presently no adequate method for assessing baitfish production or harvest. Current use data also require updating.

Fish populations are continually changing, desirable species generally decline while less desirable species increase. Causes are often unknown in deciphering the biological relationships affecting lake trout and walleye decline. The impacts and mitigation of habitat altering activities are poorly understood and must be investigated if fish habitats are to be protected and present production maintained.

3.0 Management Direction

3.1 General Fisheries Management Goal and Objectives

The general goal for the Ministry of Natural Resources is to provide opportunities for outdoor recreation and resource development for the continuous social and economic benefit of the people of Ontario and to administer, protect and conserve public lands and waters.

The objectives of fisheries management in southern Ontario are to provide opportunities for recreational fishing and to realize economic benefits derived from commercial and bait fisheries consistent with the maintenance of healthy fish communities.

The SPOF document presents goal statements related to the above statements. They emphasize the importance of protection and rehabilitation of fish habitat and fish communities and of creating greater public awareness of the importance of healthy fish communities and fish habitats.

The Huronia DLUG identified one general and three specific objectives for fisheries management. Specific objectives dealt with sport, commercial, baitfish fisheries and rare/endangered species. The guidelines also presented specific, numeric production/protection targets related to each of these objectives.

DLUG targets have been refined to reflect the results of analysis of more recently collected data related to resource productivity and the anticipated increase in demand for fisheries resources. Significant changes in targets are explained below, in the appropriate sections.

In developing the management strategies and tactics to be implemented, in the ongoing effort to achieve the targets, a number of general fisheries management principles are being adhered to.

. The highest priority will be placed on assessment, inventory, protection and rehabilitation of habitat in coldwater lakes and streams. This will reflect the fact that coldwater habitat and species are the most fragile and that growing angler demand for these species may, in some locations, exceed production capacity.

. In all producing water bodies, protection needs will receive the highest priority followed by rehabilitation of fish communities and aquatic habitat.

. The concepts of integrated resource management and multiple use will be applied to ensure that, whenever possible, other MNR resource management activities/programs are designed/implemented in a manner which compliments fisheries management programs.

. Georgian Bay and Lake Simcoe are very significant waters in Southern Ontario and the ever increasing levels of use occurring on these waters means that a large portion of the district fisheries management effort will involve Georgian Bay and Lake Simcoe.

. On Georgian Bay the MNR will rely on anglers and commercial fishermen to participate in cooperative management and adhere to catch limits, quotas and regulations to protect fish stocks.

. The effectiveness of all existing and new management programs will be assessed on an ongoing basis and, depending upon assessment findings, programs may be altered, discontinued or maintained.

. Fisheries management staff will continually strive toward development of a greater scientific knowledge of fish populations, habitat requirements and conditions and the nature/functioning of the various aquatic ecosystems.

. Development of a greater public understanding of fisheries, their values, factors which cause stress and management techniques will be an ongoing effort.

The specific objectives and targets which have been developed for the district's recreational, commercial and baitfish fisheries are consistent with the general objectives but reflect demands on the resource by users and the capability of the fisheries to meet those demands.

The most important part of this plan document is the listings of management strategies and tactics. Together they state how production targets will be achieved. Strategies can be directly related to problems and issues which, in turn, represent obstacles to the achievement of targets. Each strategy addresses a problem and contributes to the achievement of a target. Each target is the subject of a number of strategies.

Tactics can be equated with specific management activities or types of activities and can apply to a specific water body or a class of water bodies, e.g. population assessments; warmwater lakes.

3.2 Sports Fisheries Management

Objective

To meet the projected demand within the limits of a wisely managed and rehabilitated resource.

Targets

The recreational fishing target is to provide 515,400 angling opportunities annually by the year 2000. This target is significantly lower than the DLUG target of 2,340,000 opportunities. The DLUG figure was based upon the 1980 Provincial Angler Survey (PAS). As a result of more recent surveys, conducted in the district, it has been concluded that the PAS overestimated the fishing effort and harvest. The new target is considered to be realistic, in terms of the allowable yield, (estimated at 1,623,000 angling opportunities) and reflects a projected 15 percent increase in the province's population. Individual targets for all species assemblages except herring are approximately 15 percent above current use levels. Overall, the target is approximately 11 percent above the current level.

In terms of yield, the target is to provide a total potential yield of 169,900 kilograms annually by the year 2000. The estimated fishing effort requirements for the district has been calculated to be 0.5 kg. and 0.2 kg. per angler day for warmwater species and coldwater species respectively (does not apply to Lake Simcoe which is 0.67 kg). The target can be broken down into coldwater and warmwater fish community types as follows:

Coldwater - 292,400 opportunities, 58,400 kilograms
Warmwater - 223,000 opportunities, 111,500 kilograms

Discussion

The sport fishery is very diverse and existing populations are the result of both natural distribution and extensive stocking programs. The trout species assemblage found in Georgian Bay and most of its tributaries and streams and in Lake Simcoe and some of its feeder streams, is clearly the most significant component of the fishery especially in terms of the fishing effort which it attracts.

While essential components of the habitat of trout, the coldwater rivers and streams supply a small minority of the total production of the trout assemblage relative to Georgian Bay and Lake Simcoe. However, resident brook trout and brown trout are highly prized species and attract a significant volume of effort relative to the limited area of water available (922 ha).

The herring assemblage including deep water ciscoe and lake herring is the only assemblage (coldwater and warmwater included) currently being over harvested when averaged across the district. To improve this undesirable situation, the year 2000 target for herring will be 29 percent less than current levels of use and harvest. This reduction will not prevent achievement of overall targets for the coldwater sport fishery. Continuation of current management efforts especially rehabilitation of Lake Simcoe lake trout and whitefish populations and establishment of a self-sustaining lake trout backcross population in Georgian Bay will result in achievement of the coldwater fishery targets. Target achievement will be enhanced by additional programs especially extensions to seasons for rainbow trout. Meanwhile, regulations to restrict pressure on and harvest of herring will be required to permit the population to recover.

The warmwater sport fishery consists of bass, pike (includes muskellunge) walleye and perch. Largemouth bass and yellow perch are common throughout the district and are the only sport species in many of the Precambrian Shield lakes. The target is well within the districts allowable yield for warmwater species and additional opportunities could be created by improving the depressed Georgian Bay walleye populations and shifting angler interest to under utilized species.

The Severn Sound walleye population requires intensive study of all habitat components to determine the cause of the population decline and a wide range of habitat and population rehabilitation measures must be evaluated/implemented to overcome this problem. Measures may include strict limits on commercial utilization and on angler catches.

3.3 Commercial Food Fish Management

Objective

To maintain a viable industry by encouraging the harvest of commercial fish stocks, under the quota management system, where it is biologically and economically feasible.

Target

The commercial food fishing target is to harvest 98,900 kilograms of fish from the Huronia waters of Georgian Bay by the year 2000. This target does not include coarse fish or warmwater fish species for which a market currently does not exist.

This target varies significantly from that presented in the DLUG.

Discussion

Commercial food fishing activity is confined to the waters of Georgian Bay and is based upon the following species listed in order of significance: whitefish, chub, yellow perch and walleye. In the intervening period since DLUG publication the method of regulating the industry has changed. Since 1984 a maximum annual quota system has been

in place with two quota areas; GB09 and GB11 within the Huronia portion of the Bay. Seven licences were purchased by the Province in 1983-84. The results is that harvest is currently shared amongst six licences.

Over a ten year period it has been seen that harvest levels fluctuate greatly. These are at least partially explained by variations in year class strengths of certain fish stocks. The current quotas have been used as a guide in determining the target production. However, it is realized that fluctuations will continue to occur and that targets will require review and possible revision every year.

The current downturn in the Severn Sound walleye population is an example of a commercially harvested species requiring a quota re-alignment to bring harvest into line with current production.

Successful establishment of a reproducing lake trout backcross population in the Bay will enhance the commercial fish harvest. Cooperation of the fishermen will be required in establishing this population (ie. limits on harvest until populations are establsihed).

Anglers and commercial fishermen must resolve their differences, agree to management efforts to partition the fisheries resource and embark in cooperative management of the fishery.

3.4 Baitfish Management

Objective

To manage local baitfish stocks to maintain a viable commercial industry consistent with stable baitfish populations.

Target

The commercial baitfish target is to harvest 1,218,072 dozen baitfish by the year 2000. This level of utilization is considered to be well within the allowable yield but will require increasing the harvest in Georgian Bay and inland waters while maintaining Lake Simcoe harvest at current levels.

The target is considerably above the DLUG target which was based on 1980-82 harvests which were abnormally low. 1985 data provided a basis for the new target.

Discussion

The annual harvest of baitfish has fluctuated widely from year to year. Emerald shiners and various "creek" minnow species are the principle groups harvested.

Since 1986 a new management/licencing system has been used. Twenty eight blocks (based upon township boundaries) each with one licence (plus three inland units) and three on Georgian Bay. Lake Simcoe is managed by Maple District.

Demand for baitfish from Lake Simcoe exceeds the potential yield. Future harvest must be brought into line with the lake's productivity.

Failure to do this will likely result in insufficient supplies of forage for the upper level predators which are the sought after sport species.

Research is required to develop a better understanding of baitfish, especially accurate means of predicting productivity and understanding the interrelationships between baitfish and other species.

3.5 Provincially Rare and Endangered Fish Species Management

Objective

To prevent the extinction of any native fish species

Target

To ensure no native fish species becomes extinct

Discussion

Within the district, one fish species is considered provincially rare (short nose ciscoe - Coregonus Reighardi).It is found in Georgian Bay. Local stocks of two other species are considered to be threatened or endangered; Lake Simcoe whitefish and Lake Simcoe lake trout.

The short nose ciscoe in Georgian Bay was never a commercially significant species as it has been in Lake Ontario. Research is required to determine the size of the population and the critical habitat. Currently, it is being given protection through an established sanctuary (see Figure 2).

Lake Simcoe whitefish and lake trout were identified as declining stocks in the late 1960's and stocking programs are ongoing. A sanctuary lake in Nipigon District has been stocked with lake trout from Lake Simcoe to ensure that Lake Simcoe lake trout genetic material is not lost. A similar strategy may be appropriate for whitefish.

3.6 Management Areas

For management and planning purposes, the district's water bodies have been divided into six management areas on the basis of fish community types present and the over-riding management direction to be followed.

(A) Coldwater Rivers/Streams

The 55 streams in this category are listed in Appendix 1. All are either producing or are capable of producing coldwater fish species, especially trout. In some cases e.g. Nottawasaga River, these streams are actually a portion of a larger river system.

Many streams support both resident and migratory stocks which tend to compete with each other for habitat. Populations of both types of species can benefit from partitioning of streams and natural and artificial structures may serve as barriers to protect resident stocks where appropriate.

Resident and migratory salmonids have specific water quality requirements thus, habitat protection and rehabilitation will be a primary management focus.

Stocking, especially brown trout, into under-utilized coldwater stream habitat will be used to increase production and fishing opportunities.

Increases in fishing opportunities may also result from efforts to encourage/provide access to streams.

In many instances an extensive stream inventory program should be undertaken to update data in advance of stream specific management plan development.

(B) Warmwater Rivers/Streams

The remainder of the streams/rivers in the district, not capable of supporting salmonids, are included in this designation. These water bodies are especially important in producing bait fish (if less than 10 m in width) and/or warmwater sport species especially walleye and bass. Four warmwater rivers are in some cases the lower portion of rivers whose upper sections are coldwater streams and migratory salmonids pass through to reach upstream spawning and nursery habitat.

Management will focus upon protection and improvement of habitat as well as improving user data through creel surveys. Improving access to these waters will permit better utilization of a highly productive resource.

(C) Lake Simcoe

This management area includes only that portion of the lake (approximately 50 percent) within Huronia District. The lake supports populations of lake trout, whitefish, lake herring, walleye, northern pike, muskellunge, large and smallmouth bass and yellow perch. Populations of the first three species (coldwater) have been declining while the warmwater species especially yellow perch and smallmouth bass have been increasing.

Urbanization and intensive agricultural activity occurring around the lake have contributed to accelerated nutrient loadings and growth of related environmental problems.

Management of the lake's fishery is coordinated by the Lake Simcoe Fisheries Management Committee. Major ongoing programs involve habitat mapping studies, data collection through netting and creel studies and rehabilitation of degraded populations of lake trout and whitefish through annual stocking efforts.

The need for more sensitive management of baitfish populations has been established and commercial harvests may be regulated to ensure adequate supplies of forage species while allowing the industry to survive.

(D) Georgian Bay

All fisheries management activities in the 160,000 ha of Georgian Bay within Huronia District will be consistent with the major strategies identified in the Lake Huron Strategic Fisheries Management Plan. Activities will continue to be coordinated by the Lake Huron Fisheries Management Committee and the Georgian Bay Subcommittee.

The Bay will be managed to provide sport, commercial food and commercial bait fisheries based on self sustaining populations of cold and warmwater species. The Bay (Huronia portion) has the potential to produce 50 percent of the yield of the entire district. However, problem areas exist and must receive special attention. Severn Sound and Collingwood Harbour are each the target of a major, joint federal/provincial remedial action program (RAP). The Ministry of Natural Resources' share of the effort will involve habitat mapping studies, population rehabilitation (stocking), population assessments and creel surveys. Some of these activities will be part of the management program throughout the Bay.

The lake trout backcross stocking program will continue in an effort to establish this species as a self sustaining replacement for the now extinct lake trout.

Severn Sound walleye populations will continue to receive intensive study to determine which factors or combination of factors have lead to their apparent decline. Ministry of the Environment (MOE) water quality monitoring will continue as part of the RAP program.

Allowable harvests from the Bay will be apportioned among the different user groups. Whitefish, chub and yellow perch will be managed for the commercial fishery through the assigning of annual quotas for the different fish stocks.

Sport fishing for salmonids including lake trout backcross, walleye, smallmouth bass and black crappie will be encouraged. Efforts will be made to improve access to the Bay.

(E) Trent-Severn Waterway

The waters of the Trent-Severn Waterway (TSW) in Huronia include Lake Couchiching, Sparrow, Six Mile, Black Lakes, Gloucester Pool, Tea and Little Lakes and the Severn River. As part of this artificially regulated system these water bodies are subject to seasonal and annual cycles of water level fluctuation. Parks Canada (through the TSW) MNR, Ontario Hydro and Orillia Water, Light and Power (OWLP) coordinate their respective goals of providing water for marine navigation, controlling flooding potentials, providing water for recreational activities (cottaging and related activities) residential uses, fisheries habitat protection and electric power generation. Priorities favour navigation and power production. Key fisheries habitat, especially walleye spawning beds downstream of dams/power stations are occasionally exposed due to artificially reduced flows. Management efforts will be directed at reducing these impacts upon fish habitat while continuing to meet the other objectives for the waterway.

The waterway supports a very productive and heavily used warmwater fishery; 68% of inland water potential exists in these waters. In addition to improved water level management, rehabilitation of the Gloucester Pool walleye population through stocking (CFIP) will be the focal points of management activity and will be supported by regular creel surveys and walleye stocking assessments.

(F) Inland Lakes

The district contains 47 warmwater lakes 10 ha or larger in size. They are listed in Appendix 2. While there are no coldwater lakes in the district, two Precambrian Shield lakes - Woodland and McCrae are considered to have the potential to support a splake population on a put, grow and take basis.

Sixty percent of the lakes are located on the Precambrian Shield. Many of these have little or no shoreline development however, on the remaining lakes, development has occurred and in some cases, development has been very intensive.

Recent inventory data on many of the inland lakes is not available. A comprehensive re-surveying program will be implemented. Many of the shield lakes, while not easily accessible are heavily used and an effective means of regulating effort will be imposed.

Fish have been subjected to substantial impact as a result of shoreline development on some of the inland lakes and habitat rehabilitation will be implemented using CFIP whenever possible.

3.7 Management Strategies and Tactics

The management strategies and tactics to be implemented over the planning period differ widely on the basis of the scope of their application. Almost half of the strategies and especially their associated tactics are related to "field" management programs or activities to be implemented on specific water bodies or types of water bodies; e.g. warmwater lakes. Other strategies however, call for the application of "administrative" measures on a district wide basis , e.g. enforcement of existing regulations; plan review; public education/involvement.

Variations in scope also apply regarding the number of fishery types to be affected by a particular strategy or tactic, e.g. sport fishery only or sport and commercial fisheries.

3.7.1 General Strategies and Tactics

Following are the strategies and their related tactics which are to be implemented on a district wide basis.

(i) Protect existing habitat

. maintain the plan review program and the process of interagency liaison

. enforce existing legislation regulating shoreline development

. continue education of the public and other ministry program staff regarding the importance of habitat protection

. provide incentive to landowners to protect fisheries habitat

. implement a wetland policy to protect shoreline and headwater wetlands

(ii) Identify degraded habitat.

. regularly monitor the physical and biological components of fisheries habitat by means of lake and stream habitat assessments

. liaise with the Ontario Ministry of the Environment (MOE) re. fish kills caused by degraded water quality, contaminant spills, etc.

(iii) Develop and implement an enforcement plan for the district.

(iv) Prevent over-exploitation

. enforce existing legislation especially with regards to daily catch and possession limits

(v) Update and refine user surveys.

. perform creel surveys at a district level

. encourage implementation of a Provincial angler survey

(vi) Create an informed public about the complexities of fisheries management

. liaise regularly with contractors, developers, municipal staff and councillors etc. regarding the legalities and implications of work in or near the water

. encourage "in-house" development of a portable display for use at construction trade shows

. produce and distribute educational/interpretive literature

. prepare and present audio/visual programs

. assist MNR parks visitor services staff in developing and presenting fisheries interpretive programs to park visitors

(vii) Encourage public participation in district fisheries management

. create district fishery users committee to address management problems and assist with information transfer

. encourage CFIP projects designed to involve groups and improve fisheries resources and improve public understanding of management issues

. encourage Deputy Conservation Officers to assist with fisheries enforcement during peak periods

. promote a fisheries conservation/management ethic amongst families, especially young people

. encourage the public to provide information regarding enforcement issues e.g. Report a Poacher program (RAP)

(viii) Create new habitat

. encourage development projects in the water to include new fish habitat in their designs

. encourage CFIP projects designed to create new spawning and/or nursery areas

. encourage the search for new knowledge regarding the creation of fish habitat

(ix) Encourage experimental management and fisheries research

. identify needs for consideration by MNR Fisheries Branch and Fisheries Research

. contract outside/private researchers such as universities, graduate students and consultants

(x) Improve water quality with respect to controlling contaminants, eutrophication and acid precipitation

. continue working relationship/liaison with the International Joint Commission (IJC), MOE, Ontario Ministry of Agriculture and Food (OMAF) and the Federal Department of Fisheries and Oceans (DFO)

. continue monitoring contaminants, acidification through present programs.

(xi) Prevent extinction of resident species or stocks.

. enforce existing seasons and limits especially for species under stress

. maintain genetic integrity of existing populations through careful selection of fish for stocking

(xii) Prevent introduction of diseases

. enforce existing legislation regarding the movement of fish, including the aquaculture industry

. promote public education regarding the benefits of disease free fish

(xiii) Prevent the introduction of undesirable species

. enforce existing legislation including that pertaining to the aquaculture industry to prevent the culturing and release of undesirable species or strains and to encourage the use of wild strains
. educate the public not to release unused baitfish and not to transfer any wild fish from one water body to another

(xiv) Promote understanding amongst user groups

. liaise regularly with user groups through the district fishery users committee to determine the nature/extent of conflict problems

3.7.2 Sport Fishery Strategies and Tactics

(i) Protect existing habitat

. identify and map key habitat areas especially on Lake Simcoe, Georgian Bay (Severn Sound and Collingwood Harbour) and in coldwater streams
. liaise with TSW, OWLP, and Ontario Hydro regarding water level control plans as they relate to critical fisheries habitat on Lake Simcoe and the Trent Severn Waterway
. review proposals to construct dams on coldwater streams to prevent their construction where inappropriate or to ensure that bottom draw designs are used

(ii) Rehabilitate degraded or altered fish communities

. stock appropriate species to rehabilitate communities in Lake Simcoe, Georgian Bay including Nottawasaga Bay and Severn Sound, Gloucester Pool, North River, Hog Creek and Mad River
. control populations of undesirable species especially lamprey in Georgian Bay, Gloucester Pool and the Sturgeon River and other streams as necessary
. encourage release of breeding stock especially large walleye in Georgian Bay and Gloucester Pool and muskellunge throughout the district

(iii) Rehabilitate degraded habitat

. develop specific habitat management/rehabilitation plans for watersheds and lakes

. liaise with MOE regarding the development and implementation of Remedial Action Plans (RAP's) for Collingwood Harbour and for Severn Sound

. expand CFIP and other corporate or private rehabilitation efforts especially with regards to coldwater streams

. work with landowners, municipalities, conservation authorities and private groups to improve and maintain fisheries habitat by providing manpower, funding and technical expertise for projects especially on coldwater streams and inland, warmwater lakes with heavily developed shorelines

. remove dams on coldwater streams or promote the conversion of top draw dams to bottom draw

(iv) Prevent over-exploitation.

. control access to the Crown land fishery by restricting or eliminating boat cacheing on lakes with limited/restricted access

. investigate the feasability of regulating the permissible landing net sizes used on streams with migratory salmonid populations

. encourage fly fishing only on portions of the Nottawasaga River and some of its tributaries as well as on the North River

. regulate the lake herring harvest on Lake Simcoe

(v) Identify underutilized species, stocks and habitat

. conduct lake and stream inventory studies and creel surveys to identify under-utilized stocks, species and habitat and to determine angler preferences

(vi) Expand assessment of fish populations in rehabilitation areas.

. assess walleye populations especially at Port Severn, in Gloucester Pool and the North River

. assess lake trout backcross populations in Nottawasaga Bay

. assess lake trout, lake whitefish and lake herring populations in Lake Simcoe

. assess salmonid populations in coldwater streams and rivers

. assess areas where CFIP projects have been implemented

(vii) Utilize sport species to maximum benefit.

. extend season for rainbow trout in coldwater streams/rivers including a portion of each of the Nottawasaga, Sturgeon and Coldwater Rivers

. extend season closing date for bass in waters of Georgian Bay from November 30 to March 31

. investigate the feasability of altering the sanctuary at Tug Channel (Port Severn) to allow spring fishing for salmonids and remove the sanctuary in Crooked Bay of Six Mile Lake

(viii) Maximize utilization of all fish habitat

. maintain fishways and remove barriers for migratory trout in coldwater streams

. stock desirable species in under-utilized habitat e.g. chinook salmon in Georgian Bay; largemouth bass in Orangeville Reservoir, Big Gully, Douglas, Narrow and Stuart Lakes; splake in Woodland and McCrae Lakes; and brown trout in the Mad and Wye Rivers and Lafontaine, Marl and Bear Creeks

. encourage the province to reduce the licence fees for private fishing preserves

(ix) Encourage access.

. encourage fisheries resource oriented organizations to develop access facilities for streams e.g. Trout Unlimited

. work with municipalities to develop access and encourage them to utilize the Cooperative Fisheries Agreement Program (COFAP).

. provide incentives to landowners to provide access across private lands and to private waters

. acquire private lands and develop access facilities

(x) Create new habitat

. increase MNR efforts especially in developed warmwater lakes such as Orr Lake

(xi) Monitor all district fisheries on a regular basis to identify threatened species or stocks

. work with the Lake Huron Assessment Unit (LHFAU) and Lake Simcoe Fisheries Assessment Unit (LSFAU) on projects involving district fisheries, e.g. Nottawasaga Bay index netting for lake trout backcross

(xii) Prevent the extinction of resident species or stocks identified as threatened

. maintain gene pools of Lake Simcoe whitefish and lake trout in storage lakes e.g. Upper Rosalyn Lake, Nipigon District for lake trout

(xiii) Prevent the introduction of undesirable species

. maintain/create barriers to partition coldwater streams to keep rainbow trout and salmon from using brook trout habitat

(xix) Promote understanding amongst user groups

. assist in the negotiation of Indian fishing agreements

(xv) Encourage use of underutilized species/stocks

. encourage fishing derbies which target under-utilized species; e.g. black crappies in Georgian Bay
. encourage private stocking of warmwater fishing ponds with natural populations of bullhead, pumpkinseed, rock bass
. expand the bow hunting season for carp throughout the district

3.7.3 Commercial Fishery Strategies and Tactics

(i) Rehabilitate degraded or altered fish communities
. restrict the commercial catch of breeding stocks, especially walleye in Georgian Bay
. stock lake trout backcross to rehabilitate the deep water trout community in Georgian Bay
. encourage use of live capture gear

(ii) Prevent over-exploitation

. enforce existing legislation
. continue quota management for the commercial food fishery on Georgian Bay
. manage the harvesting of baitfish to assure:
   (a) adequate forage for top predator species and
   (b) adequate supplies for the baitfish industry especially in the Lake Simcoe bait fishery

(iii) Monitor and allocate resources

. assess the needs of all users and allocate resources based on allowable yields to meet demands

(iv) Prevent introduction of undesirable species

. enforce existing legislation and regulations including those pertaining to the aquaculture industry to prevent culture and release of undesirable species or strains and encourage the use of wild strains

(v) Promote understanding amongst user groups

. assist in the negotiatation of Indian fishing agreements

(vi) Encourage the use of underutilized fish species/stocks

. encourage the development of markets for under-utilized commercial species

3.7.4 Rare and Endangered Fish Species Management Strategies and Tactics

(i) Rehabilitate degraded or altered fish communities
. stock lake trout and whitefish in Lake Simcoe

(ii) Expand assessment of fish populations in Lake Simcoe
. assess lake trout and whitefish populations in Lake Simcoe

(iii) Monitor all district fisheries on a regular basis to identify threatened species or stocks
. encourage LHFAU to assess the status of the short nose ciscoe in Georgian Bay
. work with the LSFAU on projects related to assessment of Lake Simcoe whitefish and lake trout

(iv) Prevent the extinction of resident species or stocks
. maintain a sanctuary for short nose ciscoe in Georgian Bay and establish other sanctuaries as necessary
. maintain gene pools of Lake Simcoe whitefish and lake trout in storage lakes

4.0 Implementation

4.1 General Background

Consistent with the planning period established for all strategic land use planning exercises, this fisheries plan provides the direction for fisheries management activities within the Huronia District to the year 2000. Within that period all activities should be consistent with the strategies and tactics which have been selected to achieve the stated targets and objectives.

Fisheries management strategies outlined in the Lake Huron Strategic Fisheries Management Plan and in the Lake Simcoe Fisheries Management Plan, pertaining to Huronia District waters or resource users, will be implemented through the tactics outlined in this document.

Generally, strategies outlined in this fisheries management plan will be implemented through:

(i) the preparation of five year implementation schedules;

(ii) programs and projects approved and funded under the Ministry of Natural Resources work planning process;

(iii) input to or participation in other programs carried out by the Ministry of Natural Resources or local conservation authorities

(iv) cooperative efforts with local sportsmen's organizations and private interest groups under the CFIP

(v) review and approval of work plans and proposals from municipalities, private landowners and other government agencies

This section of the fisheries management plan will establish the first five year (1988-1992) implementation schedule. Annual work plans will be developed from the priorities established in this implementation schedule. The annual work plan will address both the cost and timing for the implementation of tactics.

While this schedule may be updated annually, the implementation schedule for subsequent five year periods will be formally prepared in 1992 and 1997 respectively. Schedules will be subject to public notice being given and time for public review being provided. They must be approved by the District Manager and Regional Director. Should significant modifications to the implementation schedule or management plan be required, the same review and approval process shall be followed.

Projects to be undertaken during the next five year period have been identified according to those which can be completed under existing funding, those which would require additional funding and those which may be implemented through a cooperative effort from other groups or agencies.

Routine planning, enforcement and administrative functions have not been included in the implementation schedule however, many strategies and tactics, such as enforcing existing legislation or encouraging public participation, have been identified in this plan and <u>are</u> carried out on an ongoing basis.

Preparation of a district enforcement plan has been identified as a high priority project with district wide implications for fisheries management. This plan would identify enforcement requirements and priorities and provide an additional valuable tool for preparation of annual work plans.

Numerous fisheries management projects, such as fish stocking and aquatic habitat rehabilitation, have been completed in recent years by local sportsmen's organizations under the CFIP. Since it is difficult to predict similar projects which will be initiated in the future, they have not been included in this schedule. However, the schedule does give direction for future CFIP projects.

4.2 Implementation Schedule, 1988-1992

The first five year fisheries management implementation schedule is detailed in the following table. All fisheries projects are subject to

the requirements of the Environmental Assessment Act and complying with class assessment requirements may result in changes to specific factors identified in this plan.

Generally, fisheries management over the next five year period will focus on assessment and rehabilitation.

Habitat and population assessment activities are expected to utilize a significant majority of the annual budgets. Conducting inventories on all inland lakes over the five years will provide much needed updated data on which to base future management decisions and activities. Habitat assessments will be carried out in support of the Collingwood Harbour and Severn Sound Remedial Action Plans (RAP) as well as on a number of popular coldwater streams.

Stocking programs will continue to concentrate upon rehabilitation of Lake Simcoe whitefish and lake trout and upon establishment of a lake trout backcross fishery in Nottawasaga Bay. To better utilize existing habitat, brown trout will be stocked in selected streams and largemouth bass will be placed in under producing inland lakes on the Precambrian Shield. To provide fishing opportunities splake will be stocked in McCrae and Woodland Lakes. All stocking programs are to be implemented with existing funding.

While some creel surveys will be conducted, with existing funding, on heavily used waters especially Georgian Bay, Lake Simcoe and the Trent-Severn Waterway, additional funding will be required to survey coldwater streams for which very little use data presently exists.

Administrative activities designed to permit better utilization of sport species including rainbow trout and largemouth bass will be undertaken with existing funding. Additional funding will be required however, to regulate (eliminate) the cacheing of boats on heavily used Precambrian Shield lakes.

Existing levels of funding will permit very little habitat improvement work to be undertaken however, the potential exists for significantly more of this type of work to be carried out.

Projects which relate to specific management tactics that are not identified in the first (1988-1992) implementation schedule will be identified and priorized in subsequent schedules.

TABLE 4 FISHERIES MANAGEMENT PLAN IMPLMENTATION SCHEDULE, 1988-1992
HURONIA DISTRICT

MANAGEMENT ACTIVITY	RELATED MANAGEMENT STRATEGIES	PRIORIZED LISTING OF SITES/WATERBODIES
(A) Programs which can be carried out at existing funding levels		
(i) Habitat assessment/ Identification and mapping Key habitat (HA)*	- identify degraded habitat - protect existing habitat	- Lake Simcoe - Collingwood Harbour - Severn Sound - Lake Couchiching - Mad River - Batteaux River - Noisy River - North River - Nottawasaga River (above Hwy. #50) - Pine River - Hog Creek - Willow Creek - Lovers Creek - Orr Lake - Bass Lake - Farlain Lake - Little Lake (Vespra Twp.
(ii) Population assessment/monitoring (PA)	- identify under/over utilized species, stocks and habitat - monitor and allocate resources	- all inland lakes listed in Appendix 2 - priorities to be determined annually
(iii) Fish stocking (ST)	- Rehabilitate degraded or altered fish communities - maximize utilization of all fish habitat - promote a fisheries conservation/management ethic amongst families especially young people by stocking selected waters with catchable fish	- Lake Simcoe (lake trout, whitefish) - Georgian Bay (lake trout backcross in Nottawasaga Bay) - North River, Mad River, Hog Creek - Marl Creek - Coldwater River - Hawkestone Creek

* Symbols appear on Map 2 located in pocket inside back cover

MANAGEMENT ACTIVITIES		RELATED MANAGEMENT STRATEGIES	PRIORIZED LISTING OF SITES/WATERBODIES
			- Wye River (brown trout) - Orangeville Reservoir - Big Gully - Douglas Lake - Narrow Lake (largemouth bass) - McCrae Lake - Woodland Lake (splake) - catchable fish in Pine River Fishing Area
(iv)	Develop habitat management plans (MP)	- rehabilitate degraded habitat	- Mad River - Batteaux River - Hog Creek - North River - Willow Creek
(v)	Operate fishways for spring and fall migrations (swim through) (FW)	- maximize utilization of all fish habitat	- Boyne River (Earl Rowe Provincial Park) - Nottawasaga River (Nicolson's Dam)
(vi)	Creel Survey (CS)	- identify under/over utilized species/stocks - update and refine user surveys - assess changes in fish communities - assess rehabilitated communities	- Georgian Bay (Severn Sound) (L.H.F.A.U.) - Six Mile - Sparrow - Little - Gloucester Pool - Couchiching - Black - Georgian Bay (Nottawasaga Bay), (L.H.F.A.U.) - Sturgeon River
(vii)	a. Extended Seasons for rainbow trout and largemouth bass (ES)	- utilize sport species to maximum benefit	- rainbow trout - Nottawasaga River year round from confluence of Boyne to mouth - Sturgeon River year round from lamprey barrier to mouth - Coldwater River, year round from County Road 19 to the mouth

MANAGEMENT ACTIVITY	RELATED MANAGEMENT STRATEGIES	PRIORIZED LISTING OF SITE/WATERBODIES
		- largemouth bass - Georgian Bay and Lake Couchiching, extend from Nov. 30 to March 31
(vii) b. Alter/remove sanctuaries (RS)		- Georgian Bay (Tug Channel) investigate the feasibility of altering sanctuary to permit fishing migratory salmonids while protecting walleye - Six Mile Lake (Crooked Bay) remove sanctuary
(viii) Regulate the lake herring harvest (LH)	- prevent over-exploitation	- Lake Simcoe
(ix) Habitat improvement (HI)	- rehabilitate degraded habitat	- Boyne River - Nottawasaga River - Pine River - Sheldon Creek - Hog Creek - Orr Lake
(B) Programs which could be undertaken with additional funding		
(i) Develop regulations to restrict boat cacheing on Crown land lakes (BCRF))	- prevent over-exploitation	- Long Lake - Boleau Lake - Eastern Lake
(ii) Creel Surveys (CSF)	- update and refine user surveys	- Mad River - Batteaux River - Noisy River - Pine River - Nottawasaga River (above Hwy. #50) - Hog Creek - Willow Creek - North River
(iii) Population assessment/monitoring (PAF)	- identify under/over utilized species and stocks of commercial fish species - monitor and allocate resources (quota setting)	- Georgian Bay (Nottawasaga River)

MANAGEMENT ACTIVITY	RELATED MANAGEMENT STRATEGIES	PRIORIZED LISTING OF SITES/WATERBODIES
(iv) Habitat Improvement (HIF)	- rehabilitate degraded habitat	- Mad River - Pretty River - Batteaux River - Silver Creek - Bass Lake - Farlain Lake - Little Lake (Vespra Twp.)
(v) Remove dams or convert to bottom (DRF)	- rehabilitate degraded habitat - maximize utilization of habitat	- Mad River - Glen Huron Dam draw (conversion) - North River - Nottawasaga River-Nicolson's Dam (remove)
(vi) Create barriers to partition streams for protection of resident salmonids (CBF)	- prevent introduction undesirable species - prevent extinction of resident species or stocks	- Willow Creek - Hawkestone Creek - Sturgeon River - North River - Bluffs Creek - Sheldon Creek - Pine River
(vii) Fish stocking (STF)	- promote a fisheries conservation/management ethic amongst families by stocking catchable fish	Copeland Forest Resources Management Area - Earl Rowe Prov. Park - selected Park Reserves
(C) Programs which could be carried out in cooperation with local sportsmen's clubs/or volunteers		
(i) Habitat Improvement (HIV)	- rehabilitate degraded habitat	- Hog Creek - Matheson Creek - North River - Willow Creek
(ii) Fish stocking (STV)	- rehabilitate degraded or altered fish communities	- walleye - Severn Sound - Gloucester Pool
(iii) Development of access facilities (AFV)	- encourage access - utilize sport species to maximum benefit	- Nottawasaga River - North River

GLOSSARY

BAITFISH

. Any member of the minnow family Cyprinidae, except carp and goldfish; the mudminnow family Umbridae; the stickleback family Gasterosteidae; the trout-perch family Percopsidae; the sculpin family Cootidae; the gunus Leucichthy of the whitefish family Coregonidae and the darter sub family Etheostomatinae.

COARSE FISH

. Fish species which are not normally sought by recreational anglers and are not marketed commercially. This commonly includes fish from the famiilies Catostomidae (suckers), Ictaluridae (catfish), Gadidae (cods), Sciaenidae (drums) and Cyprinidae (carp).

COMMERCIAL FISH

. Commercial fish refers to those species captured from Lake Huron-Georgian Bay waters, under authority of a licence, and marketed for human consumption.

EXOTIC FISH SPECIES

. A fish species which is neither native nor has become naturalized or self sustaining in waters within the Province of Ontario.

FISH COMMUNITY

. A combination of different fish species living and interacting together in the same body of water.

INDIGENOUS FISH SPECIES

. The native fish species which originally inhabited a waterbody. For example, lake trout was one of the indigenous fish species of Lake Huron and Georgian Bay.

LAKE TROUT BACKCROSS

. A hybrid fish produced from crossing a splake with a lake trout (3/4 lake trout X 1.4 brook trout).

NATURALIZED FISH SPECIES

. A fish species which was not indigenous to a particular waterbody but was introduced and has become established through natural reproduction. Some examples in Lake Huron and Georgian Bay would include rainbow trout and brown trout.

OBJECTIVE

. A quantifiable and attainable end which is to be achieved.

PACIFIC SALMON

. Pacific salmon includes coho salmon, chinook salmon, kokanee salmon, pink salmon and any member of the gunus Orchorhynchus.

PANFISH

. This group generally includes members of the families Centrarchidae (such as rock bass, sunfish and crappie) and Percidae (yellow perch).

POTENTIAL YIELD

. The theoretical maximum yield that can be taken annually without exhausting the compensatory reserve of a fish community. The term is analogous to maximum sustainable yield, maximum equilibrium yield and theoretical yield.

PROJECTED YIELD

. The projected yield represents the estimated fisheries yield at the year 2000 and is based upon changes in fish stocks as well as realizing a proportion of the potential yield from waters currently rated as under-producing.

REHABILITATION

. This term may be applied to both fish populations and fisheries habitat. In both instances rehabilitation denotes efforts to enhance or restore a degraded or stressed situation to its original condition.

SOUTHERN ONTARIO

. The southern Ontario planning region includes the following districts: Algonquin Park, Aylmer, Brockville, Cambridge, Carleton Place, Chatham, Cornwall, Huronia, Lindsay, Maple, Napanee, Niagara, Owen Sound, Parry Sound, Pembroke, Simcoe, Tweed and Wingham.

SPLAKE

. A hybrid fish produced from crossing a lake trout with a brook trout (½ lake trout X ½ brook trout).

SPORT FISH

. Top predator fish species which are sought and may legally be taken by angling. In the Huronia District this usually includes fish from the families Salmonidae (trout and salmon), Percidae (walleye and perch), Esocidae (pike and muskellunge) and Centrarchidae (basses).

STOCK

. A species group or population of fish which maintains and sustains itself over time and may be identified by distinct genotypic or phenotypic characteristics.

STRATEGY

. Planned actions or measures designed to achieve a desired end.

TACTIC

. A specific method designed to achieve one or more strategies.

TARGET

. A quantified end to be achieved or completed by a specific date.

APPENDICES

APPENDIX 1: Streams either producing or capable of producing coldwater fish species, especially trout.

Bailey Creek
Batteaux River
Baxter Creek
Bear Creek
Beeton Creek
Black Ash Creek
Black Band Creek
Bluffs Creek
Boyne River
Brock's Beach Creek
Coates Creek
Coldwater River
Coleman Creek (Hewitt's)
Credit River
Egbert Creek
Glen Huron Creek (Leys Burns)
Hawkestone Creek
Hog Creek
Innisfil Creek
Joe Mennel's Creek
Keenansville Creek
Sturgeon River
Thunder Bay Creek
Unnamed Creek #5 (Innisfil Twp.)
Unnamed Creek #6 (Innisfil Twp.)
Unnamed Creek #11 (Innisfil Twp.)
Kid's Creek
Kruger Creek
Lafontaine Creek
Lisle Creek
Lover's Creek
Mad River
Marl Creek
Matheson Creek (Aunt Maggie's)
McMahon Creek
Monora Creek
Noisey River
North River
Nottawasaga River (upper reaches)
Ossossane Creek
Patton's Creek (Bear)
Picottes Creek
Pine River
Pretty River
Sheldon Creek
Silver Creek, Nottawasaga Twp.
Silver Creek (Orillia Twp.)
Sucker Creek
Tioga Creek
Whiskey Creek
Willow Creek

APPENDIX 2: All lakes in Huronia District, 10 hectares in area or larger

Barron	Baxter	Boleau
Bass	Bearshead	Buck
Buckshot	Burrows	Cranberry
Douglas	Dumbell	Eastern
Farlain	Gibson	Gignac
Grass	Hart (Gibson)	Horseshoe
Jerry's	Lalligan	Lamour
Little Boleau	Little (Vespra Twp.)	Little, Gravenhurst Twp.
Lone	Long (Matchedash)	Marl
McDonald	Midland Park	Morrison
Mosquito	Mud	Narrow
Orangeville Reservoir	Orr	Otter
Penetang	Rat (Cana)	St. George
St. John	Second	Spence
Stuart	Turtle	Woodland

APPENDIX 3: Summary of Public Consultation - Phase One, Huronia District Fisheries Management Planning Program

Public input was solicited during July, 1987. This first phase consisted of five elements designed to advertize the planning program and provide opportunities for public review and input on the Background Information Summary Report (BISR) including Problems and Issues.

Three public information forums were held (July 21, 22 and 23). Prior to the forums, 158 copies of a newsrelease were distributed to all district media, outdoor writers, fisheries user groups, government agencies and other interested individuals. In addition, copies of the BISR were mailed to user groups, media and interested individuals.

Attendance at the public information forums was as follows:

Rosemont	-	10
Wye Marsh	-	22
Midhurst	-	16

A questionnaire was included in BISR and all visitors to the public forums were encouraged to complete and return them. Ten questionnaires were returned.

Where appropriate responses to questions on the questionnaire were tabulated. All additional written comments and all questions raised and comments made at the Public Forums have been documented in the report Public Consultation Summary and Analysis of Public Input, (September, 1987).

A ranking of the perceived relative significance of the six Problems and Issues identified in the BISR was developed from the analysis of responses to the questionnaire. The ranking, with the most significant issue first is as follows:

Loss of fish habitat and environmental quality
Inadequate scientific and technical knowledge
Loss of fish stocks
Lack of public awareness/unrealistic demands on fishery
Resource use conflict
Under-utilization of fish stocks or habitat

This ranking is reflected in the Draft Plan where habitat protecion, habitat and population assessments and stocking to rehabilitate depleated stocks/species are the three top management priorities.

Additions to the original listing of strategies and tactics presented in the BISR have been made as a result of comments received. Under General Strategies and Tactics; - 3.7.1 (vii) . promote a fisheries conservation/management ethic amongst families, especially young people by stocking catchable fish. Under Sport Fishery Strategies and Tactics; 3.72 (iv) . regulate the lake herring harvest on Lake Simcoe. Under Commercial Fishery Strategies and Tactics; 3.7.3 (i) . encourage use of live capture gear . manage the harvesting of baitfish to assure: (a) adequate forage for top predator species and (b) adequate supplies for the baitfish industry especially in the Lake Simcoe bait fishery

ADDENDUM

PLEASE NOTE: The following are additions/changes to the text of the Huronia District Draft Fisheries Management Plan.

ADDITIONS

1. p. 25 under item (vii) add the following two tactics;
   . investigate the feasibility of opening the rainbow trout season at 6:00 a.m. each year

   . investigate the feasibility of opening the rainbow trout season on a constant date; e.g. April 20

2. p. 25 under item (viii) add the following tactic;
   . create barriers to prevent the utilization of unsuitable streams, for spawning, by migratory salmonids; e.g. Black Ash Creek

3. p. 26 in item (xv), the third tactic, remove the word "carp" and add the following after the word "for";
   coarse fish (carp and sucker)

4. p. 27 add an item (vii) under section 3.7.3 as follows;
   (vii) Encourage the commercial aquaculture industry to utilize appropriate ground and surface waters for the culturing of salmonids and baitfish

5. p. 33 add an item (iv) under section "C" as follows:

(iv)	Fish stocking (STV)	- maximize utilization of habitat	- Chinook Salmon - Nottawasaga Bay

QUESTIONNAIRE

Please take a few minutes and read the Draft Fisheries Management Plan for Huronia District, especially the Implementation Schedule beginning on page 27.

Indicate your level of support for the following management activities proposed in the five year implementation schedule.

Return completed questionnaires by December 18, 1987 to:

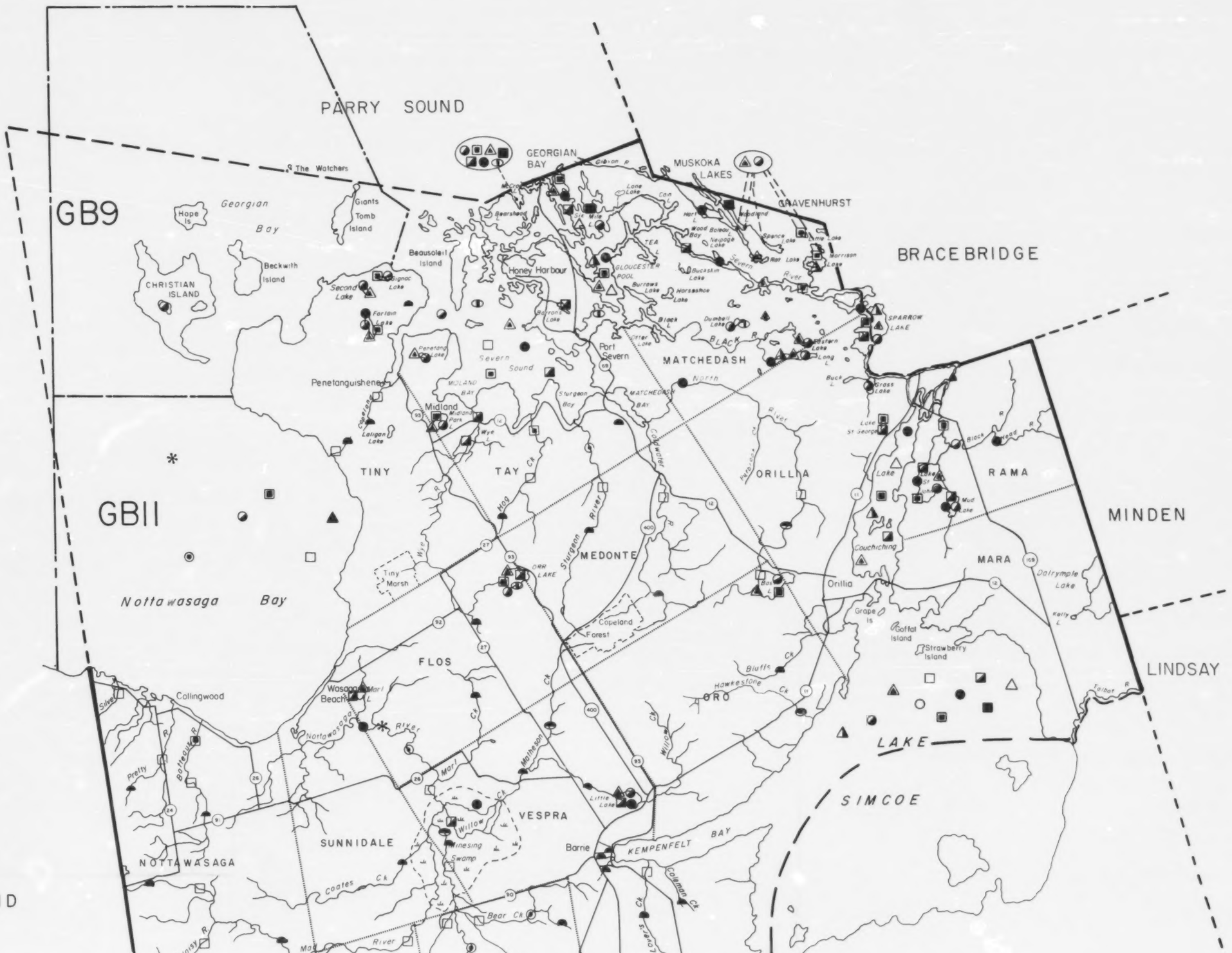
District Manager
Ministry of Natural Resources
Huronia District
Midhurst, Ontario
L0L 1X0

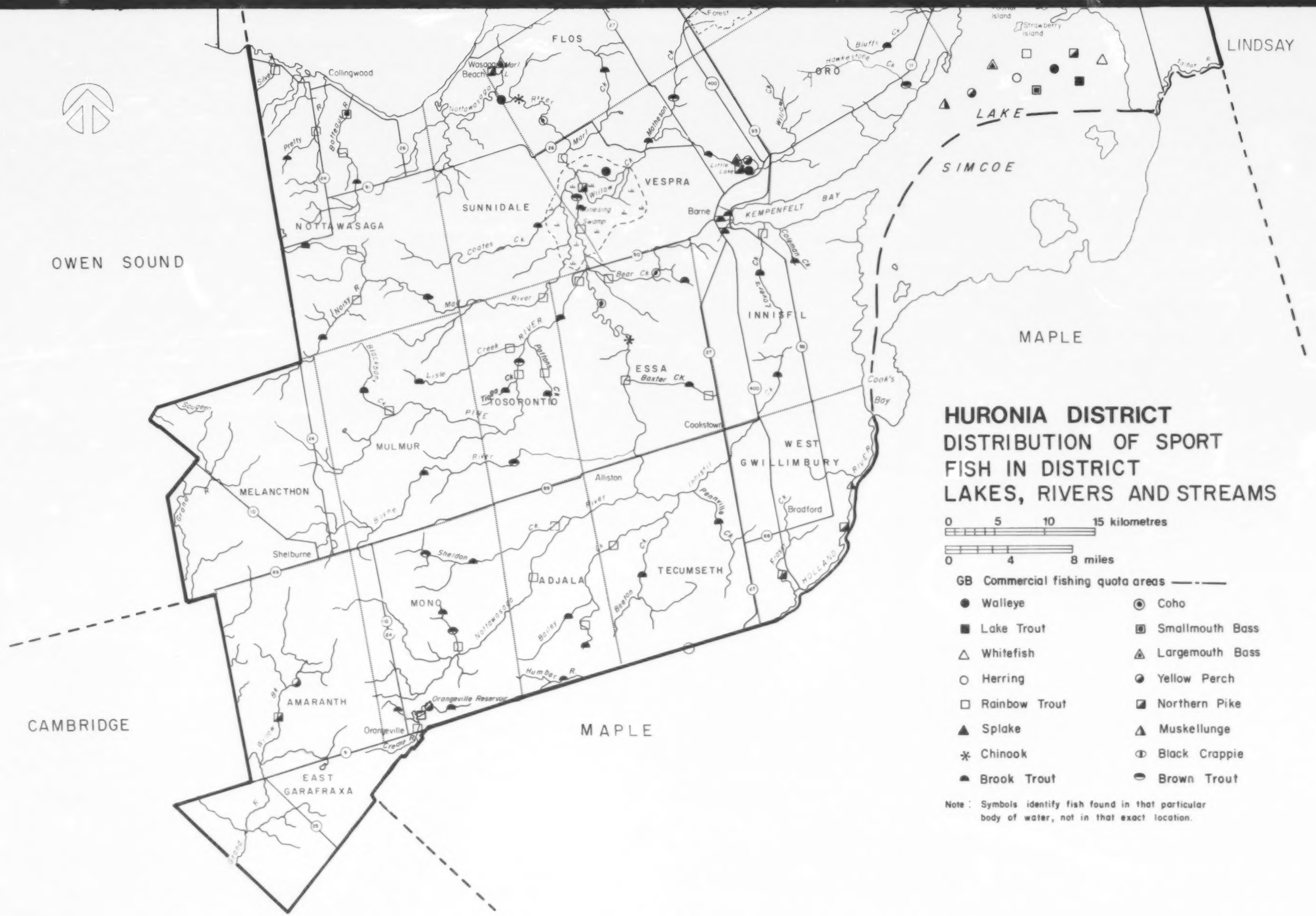
	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
1. Programs to assess habitat and sport fishery populations will be implemented and will involve inventorying of all inland lakes and creel surveys on Lake Simcoe, Georgian Bay, Trent-Severn Waterway and the Sturgeon River.					
2. Fisheries staff will continue to be active in the review and modification of development plans that impact fish or fish habitat.					
3. A district fishery users committee will be created to address management problems and assist with information transfer.					
4. Fisheries staff will work closely with MOE to identify problems and develop Remedial Action Plans (RAP) for Collingwood Harbour and Severn Sound.					
5. Stocking programs on Lake Simcoe will continue to concentrate on rehabilitation of whitefish and lake trout.					
6. Stocking programs on Georgian Bay will continue to concentrate on the establishment of lake trout backcross.					
7. Stocking programs on selected coldwater rivers/streams will concentrate on brown trout.					
8. Stocking programs on warmwater inland lakes currently without sport fish will concentrate on largemouth bass.					
9. Catchable sized rainbow trout will be stocked in the Pine River Provincial Fishing area to promote a fisheries conservation ethic amongst families and young people.					

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
10. The feasibility will be investigated of regulating permissible landing net sizes used on streams with migratory salmonid populations.					
11. To allow better use of rainbow trout, seasons will open all year on lower sections of the Coldwater, Sturgeon and Nottawasaga Rivers.					
12. To allow better use of large-mouth bass, seasons will be open until March 31 on Georgian Bay.					
13. With existing funding the present level of stream improvement will be maintained on the Boyne, Nottawasaga, Pine, Sheldon and Hog.					
14. The feasibility of altering the fish sanctuary at Tug Channel Georgian Bay (Port Severn) to permit fishing for migratory salmonids will be investigated.					
15. The sanctuary in Crooked Bay of Six Mile Lake will be removed.					
16. The harvest of lake herring from Lake Simcoe will be regulated by closed seasons and/or catch limits.					
17. A bow season for coarse fish (carp and suckers) will be instituted throughout the district.					
18. An enforcement plan will be developed for Huronia District.					
19. Deputy Conservation Officers will continue to be encouraged to assist during peak periods.					

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
20. McCrae and Woodland Lakes will be stocked with Splake to provide angling opportunities and to utilize habitat.					
21. Interested volunteer groups will be encouraged to participate in habitat improvement projects through the CFIP program.					
22. Interested volunteer groups will be encouraged to participate in rehabilitating walleye populations in Georgian Bay and Gloucester Pool through the CFIP program.					
23. Interested volunteer groups will be assisted with culturing chinook salmon for stocking Georgian Bay (maximum 100,000 eggs/yr.).					
24. Fly fishing only restriction will be encouraged on portions of the Nottawasaga River and some of its tributaries as well as on the North River.					
25. More programs could be undertaken with additional funding. Please review those outlined in the implementation schedule. If you feel some of these should be undertaken with existing funding please indicate below. Also suggest which programs should be dropped to accommodate your suggestions.					

MAP I


PARRY SOUND
GEORGIAN BAY
MUSKOKA LAKES
GRAVENHURST
BRACEBRIDGE
GB9
GBII
Georgian Bay
The Watchers
Giants Tomb Island
Hope Is
Beausoleil Island
Beckwith Island
CHRISTIAN ISLAND
Honey Harbour
Penetanguishene
Midland
Port Severn
Severn Sound
MATCHEDASH
SPARROW LAKE
TINY
TAY
ORILLIA
RAMA
MINDEN
MEDONTE
Tiny Marsh
Nottawasaga Bay
Copeland Forest
Orillia
MARA
Couchiching
Grape Is
Coffat Island
Strawberry Island
LINDSAY
FLOS
Collingwood
Wasaga Beach
ORO
LAKE SIMCOE
VESPRA
SUNNIDALE
NOTTAWASAGA
Barrie
KEMPENFELT BAY
INNISFIL
OWEN SOUND



HURONIA DISTRICT
DISTRIBUTION OF SPORT FISH IN DISTRICT LAKES, RIVERS AND STREAMS

0 5 10 15 kilometres

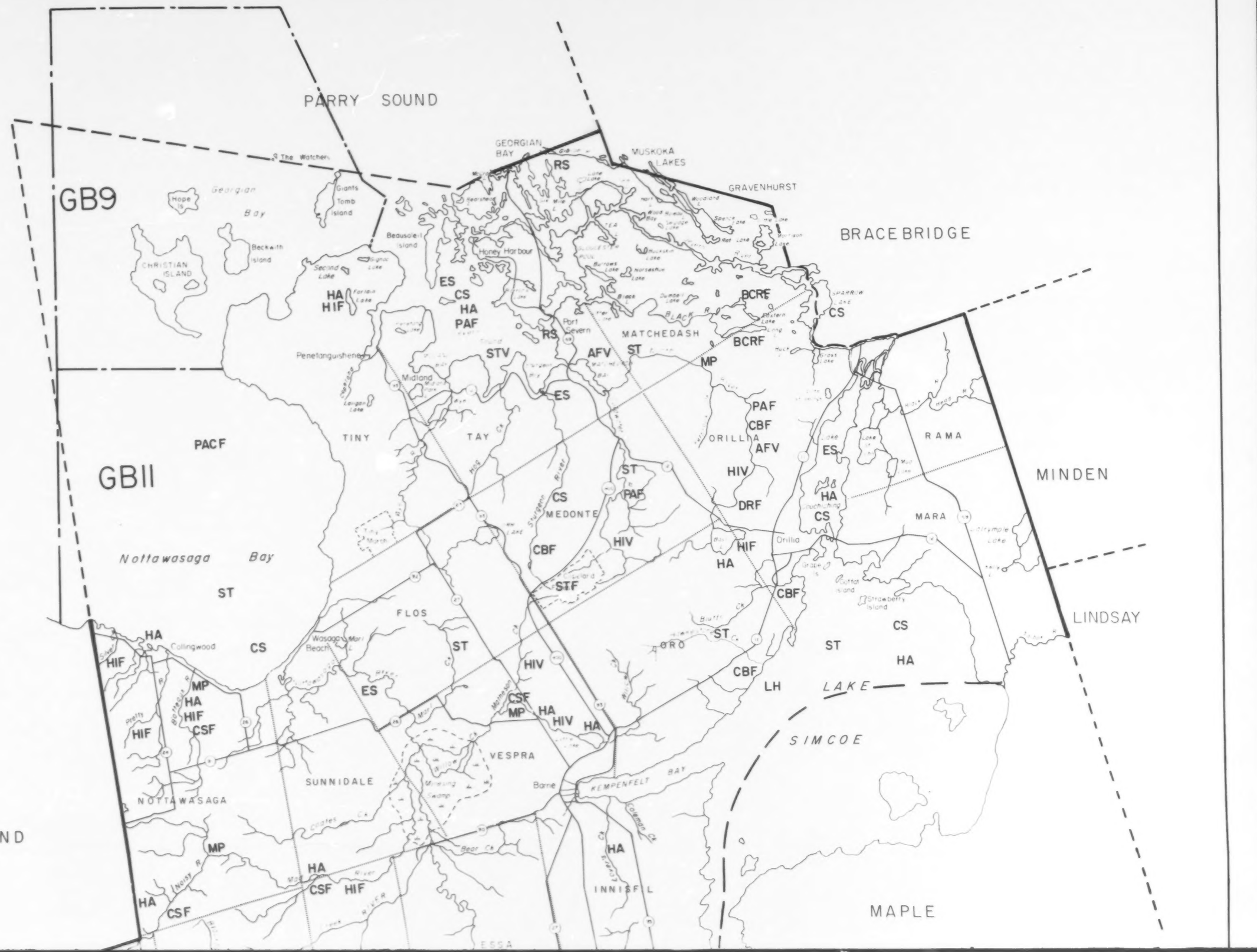
0 4 8 miles

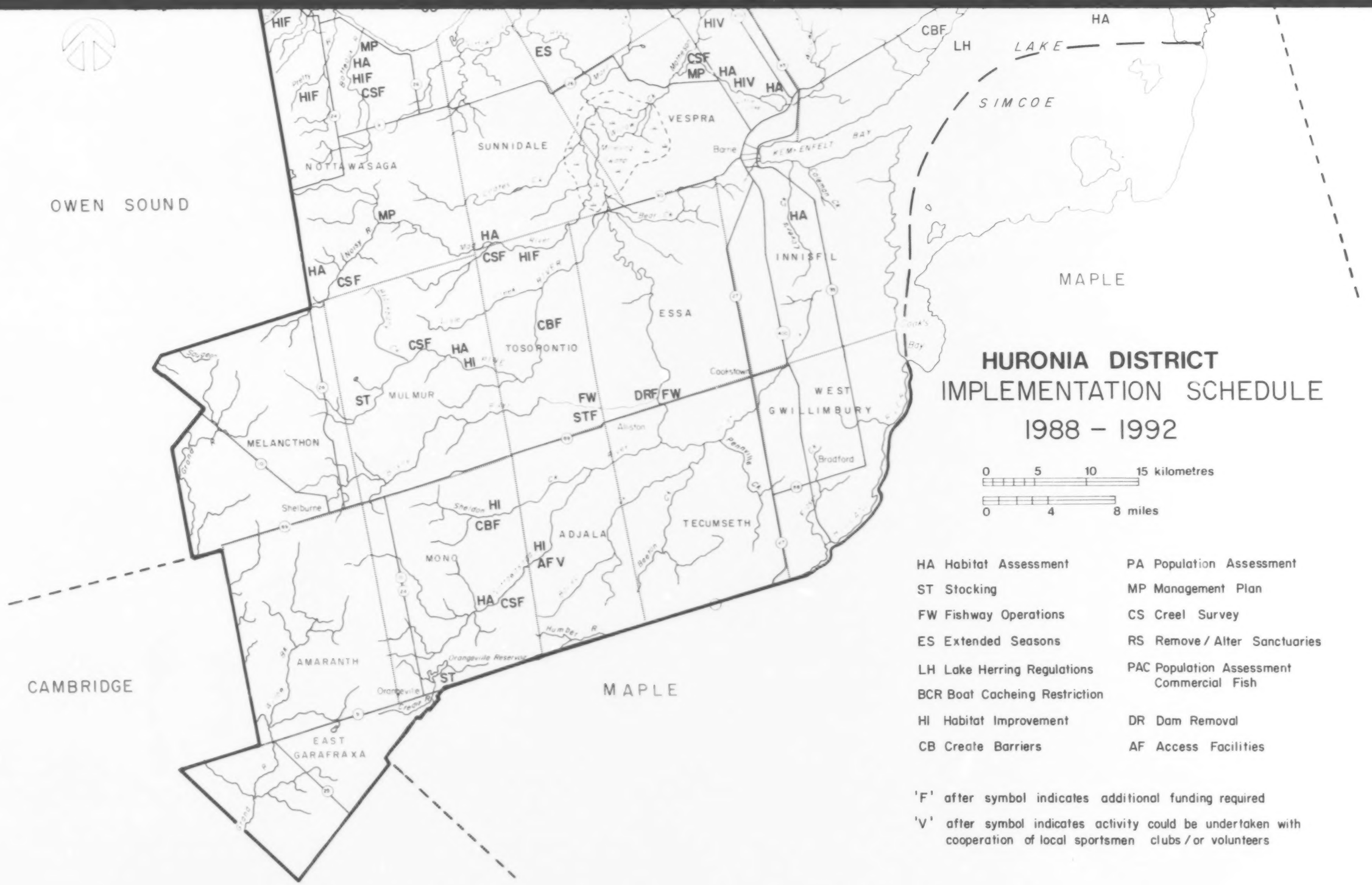
GB Commercial fishing quota areas ——·——

● Walleye	◉ Coho
■ Lake Trout	▣ Smallmouth Bass
△ Whitefish	◬ Largemouth Bass
○ Herring	◕ Yellow Perch
□ Rainbow Trout	◪ Northern Pike
▲ Splake	◭ Muskellunge
✳ Chinook	◑ Black Crappie
◓ Brook Trout	◒ Brown Trout

Note : Symbols identify fish found in that particular body of water, not in that exact location.

MAP 2


PARRY SOUND
GB9
GB11
The Watchers
Georgian Bay
Hope Is.
Giants Tomb Island
CHRISTIAN ISLAND
Beckwith Island
Beausoleil Island
Honey Harbour
GEORGIAN BAY
MUSKOKA LAKES
GRAVENHURST
BRACEBRIDGE
MINDEN
LINDSAY
MAPLE
RAMA
MARA
ORILLIA
Orillia
MATCHEDASH
Port Severn
Penetanguishene
Midland
TINY
TAY
MEDONTE
FLOS
SUNNIDALE
VESPRA
ORO
INNISFIL
ESSA
NOTTAWASAGA
Nottawasaga Bay
Collingwood
Wasaga Beach
Barrie
KEMPENFELT BAY
SIMCOE
LAKE
LH
OWEN SOUND
RS
ES
CS
HA
PAF
HIF
STV
AFV
ST
MP
BCRF
PACF
CBF
HIV
DRF
HF
STF
CSF



HURONIA DISTRICT
IMPLEMENTATION SCHEDULE
1988 – 1992

0 5 10 15 kilometres

0 4 8 miles

HA Habitat Assessment	PA Population Assessment
ST Stocking	MP Management Plan
FW Fishway Operations	CS Creel Survey
ES Extended Seasons	RS Remove / Alter Sanctuaries
LH Lake Herring Regulations	PAC Population Assessment Commercial Fish
BCR Boat Cacheing Restriction	
HI Habitat Improvement	DR Dam Removal
CB Create Barriers	AF Access Facilities

'F' after symbol indicates additional funding required

'V' after symbol indicates activity could be undertaken with cooperation of local sportsmen clubs / or volunteers